

4.8 VEHICULAR AND RAIL TRANSPORTATION

Assessment of vessel traffic is addressed as part of the Systems Safety/Risk Analysis Section 4.1.4, Impacts Analysis and Mitigation Measures. As part of the Shell Terminal operations, associated truck traffic would be assumed to continue if a new lease is granted. The potential for impacts associated with routine operations and accident conditions during the transport of product for the Project and alternatives will be examined.

4.8.1 Environmental Setting

Roadway Transportation System

Terminology

Traffic is typically measured and averaged over a 24-hour period. This average daily traffic (ADT) is often based on an actual 24-hour traffic count taken during mid-week. In some cases, traffic is measured at various times during the day and extrapolated to the ADT. Seasonal variations may also be taken into account by collecting data during different months of the year.

The capacity of a roadway segment or intersection is the maximum rate of vehicular traffic flow under prevailing traffic, design, and operational conditions. Factors affecting capacity include, traffic controls, lane widths, grades, the amount of truck and bus traffic, the availability of on-street parking, parking turnover, and turn movements. Capacity is commonly defined for hourly periods of time. However, for generalized planning purposes, it is useful to define capacity as the maximum volume of traffic that a roadway may be expected to carry during a 24-hour period to maintain a level of service (LOS) E. Hourly capacities as defined in the "Highway Capacity Manual" for various facilities under ideal conditions are listed in Table 4.8-1.

**Table 4.8-1
Daily Capacities for Major and Minor Arterials**

Facility Geometrics	Capacity in Vehicles Per Day (LOS E)
8-lane Divided Regional Arterial	80,000
8-lane Divided Major Arterial	72,000
6-lane Divided Major Arterial	54,000
4-lane Divided Major Arterial	36,000
4-lane Undivided Major Arterial	30,000
2-lane Undivided Major Arterial	15,000
4-lane Minor Arterial	24,000
2-lane Minor Arterial	12,000
Source: Highway Capacity Manual	

The LOS of a roadway segment or intersection is a qualitatively defined measure of prevailing traffic, design, and operational conditions. The LOS, denoted alphabetically from A to F, best to worst, is a summary evaluation of the degree of congestion, roadway design constraints, delay, accident potential, and driver discomfort experienced during a given period of time (peak hour for intersections and 24 hours for roadway segments). While LOS A is the most desirable operational condition for a roadway or intersection, LOS C is considered a benchmark for planning purposes. In heavily urbanized areas, LOS D is an accepted, though undesirable, condition for peak-hour travel, particularly on freeways. The LOS may be quantitatively calculated by a number of methods that generally compare traffic volumes with the physical and operational capacity of the roadway under study. For roadway segments and controlled intersections, the volume/capacity (V/C) ratio is indicative of the LOS. The LOS interpretation is presented in Table 4.8-2.

**Table 4.8-2
LOS Interpretation**

LOS	V/C Ratio
A	0 - 0.60
B	0.61 - 0.70
C	0.71 - 0.80
D	0.81 - 0.90
E	0.91 - 1.00
F	> 1.00
Source: Highway Capacity Manual	

Existing Roadways

The Shell Terminal is located off of Interstate 680 (I-680) at the Marina Vista Road exit. The entrance to the Shell Terminal is through the Shell Refinery north entrance located off Marina Vista Road approximately one-half mile west of I-680. Marina Vista Road is a two-lane paved street with dirt shoulders. While this road is lightly traveled, trucks make up a large portion of the traffic volume, reflecting the industrial nature of the land use in the area. The main entrance to the Shell Refinery is located along Pacheco Blvd.

The city of Martinez has jurisdiction for Marina Vista Road near the Shell Refinery and Terminal. The posted speed limit on this stretch of road varies from 25 to 35 miles per hour. The roadway is narrow, with one lane in each direction. A portion of the roadway contains a physical divider. Traffic counts within the vicinity of the Refinery at the Marina Vista Rd/Court St. intersection are included in Table 4.8-3 from the Draft Downtown Martinez Specific Plan EIR (LSA Associates 2003). Table 4.8-3 demonstrates the traffic volumes and LOS for an intersection to the west of the Refinery. Marina Vista Rd splits off into a one-way road westbound, while Escobar travels back to Marina Vista Rd eastbound. The Marina Vista Rd./Court St. intersection is regulated by stop signs. Including both traffic volume points allows for a more comprehensive illustration of the vehicular traffic in the surrounding area.

Table 4.8-3
Traffic Volumes on Marina Vista Road/Escobar Street

	AM Peak Hour	PM Peak Hour	Daily Volume*
Marina Vista Rd. (Westbound at Court Street)	49	355	4,260
LOS Rating	C	B	A
Escobar Street (Eastbound at Alhambra Avenue)	158	142	1,896
LOS Rating	A	A	A
*Worst case conservatively assumed based on higher of AM or PM peak hour x 12. Source: Draft Downtown Martinez Specific Plan EIR (LSA Associates 2003)			

Tables 4.8-4 and 4.8-5 depict vehicle counts to the west and east of the I-680, respectively. Note that Marina Vista Road becomes Waterfront Road approximately one-half mile east of I-680. The numbers are the most current available counts per Contra Costa County Traffic Assessment Division (personal communication, Brad Beak).

Table 4.8-4
Vehicle Counts on Marina Vista Road/Waterfront Road – Near I-680

24-Hour Vehicle Count, Marina Vista Road, West of I-680, December 2002				
Eastbound Traffic Total	Eastbound Peak Hour	Westbound Traffic Total	Westbound Peak Hour	Total Both Directions
4,337	AM 295	5,594	AM 641	9,931
	PM 644		PM 303	
Source: Contra Costa County Traffic Assessment Division				

Table 4.8-5
Vehicle Counts on Marina Vista Road/Waterfront Road – East of I-680

24-Hour Vehicle Count, Waterfront Road, East of I-680, December 2002				
Eastbound Traffic Total	Eastbound Peak Hour	Westbound Traffic Total	Westbound Peak Hour	Total Both Directions
2,184	AM 311	2,185	AM 179	4,369
	PM 163		PM 258	
Source: Contra Costa County Traffic Assessment Division				

There are no truck or vehicle trips attributable to Shell's Terminal operations. Employees and deliveries for the Shell facility are associated with the Refinery. All employee vehicles as well as delivery vehicles and trucks enter through a security gate and all vehicles park inside the facility.

Rail

No rail or rail spur is associated with the Shell Terminal; however, rail is available to serve the Refinery.

4.8.2 Regulatory Setting

Those portions of the affected ground transportation system available for public use are regulated by local, State, and Federal agencies. Interstate highways, State routes, and bridges are governed by the Federal Highway Administration (FHWA) and Caltrans; county roads are governed by Contra Costa County; and other local streets and highways are governed by local cities. In all cases, specific standards apply with respect to the planning, design, and operation of roadways and intersections. Not all governing agencies impose the same criteria (e.g., cross sections and rights-of-way for the same street may differ from jurisdiction to jurisdiction).

Rail facilities are regulated in the State by the Public Utilities Commission (PUC). Train operations are also subject to PUC guidelines; the design and operation of railroad grade crossings are subject to Federal Railroad Administration (FRA) guidelines. Numerous other Federal agencies also have regulatory authority over rail transportation.

4.8.3 Impact Significance Criteria

Traffic impacts are considered significant if any of the following apply:

- Project traffic or construction activities must use an access road that is already at or exceeds LOS E, or brings a roadway up to LOS E;¹
- Project traffic or construction activities would result in a substantial safety hazard to motorists, bicyclists, or pedestrians;
- Construction of the proposed Project or alternatives would restrict one or more lanes of a primary or secondary arterial during peak-hour traffic, thereby reducing its capacity and creating congestion; and/or
- Project implementation results in insufficient parking.

¹ LOS E is operating conditions at or near capacity. All speeds are reduced to a low but relatively uniform value. Freedom to maneuver within the traffic stream is extremely difficult. Small increases in flow or minor perturbations within the traffic stream will cause breakdowns. LOS F exceeds LOS E and is defined as a flow breakdown, or when arrival flow exceeds discharge flow, such that traffic stalls and/or backs up.

4.8.4 Impacts Analysis and Mitigation Measures

Under the new lease, Shell Terminal operations will continue as at present. No vehicular activity is associated with the existing Shell Terminal operations, hence no impacts would result from continued operations. Over the 30-year life of the lease, no modifications to the Shell Terminal are proposed. All parking will remain onsite. Any increase in capacity would be associated with an increase in ships offloading a greater quantity of materials that would be processed in the Refinery. Any increase in vehicular activity would be associated with the Refinery operations and not the Shell Terminal. No impacts would occur since there would be no increase in traffic from Shell Terminal operations.

4.8.5 Impacts of Alternatives

Impact TR-1: No Project Alternative - Effects on Vehicular Traffic With No New Shell Terminal Lease

During construction associated with dismantling, a small amount of construction traffic may be associated with the effort, resulting in a less than significant (Class III) impact. Decommissioning would eliminate the five trucks that normally provide services to the Shell Terminal. This minor amount of truck removal from the local roadway would result in a less than significant impact (Class III).

Under the No Project Alternative, Shell's lease would not be renewed and the existing Shell Terminal would be subsequently decommissioned with its components abandoned in place, removed, or a combination thereof. The decommissioning of the Shell Terminal would follow an Abandonment and Restoration Plan as described in Section 3.3.1, No Project Alternative.

Under the No Project Alternative, alternative means of crude oil/product transportation would need to be in place prior to decommissioning of the Shell Terminal, or the operation of the Shell Refinery would cease production, at least temporarily. It is more likely, however, that under the No Project Alternative, Shell would pursue alternative means of traditional crude oil transportation, such as a pipeline transportation, or use of a different marine terminal. Accordingly, this Draft EIR describes and analyzes the potential environmental impacts of these alternatives. For the purposes of this Draft EIR, it has been assumed that the No Project Alternative would result in a decommissioning schedule that would consider implementation of one of the described transportation alternatives. Any future crude oil or product transportation alternative would be the subject of a subsequent application to the CSLC and other agencies having jurisdiction, depending on the proposed alternative.

Under this alternative, the appurtenant structures on the Shell Terminal could be dismantled. The removed pipelines and pumping equipment would probably remain at the Refinery and would not be relocated over public roads. While much of the construction effort itself would be via barge, if any of the fixtures are relocated, they

could be hauled offsite via heavy trucks. A construction crew of 25 workers is anticipated. While most of the removed fixtures would probably be retained at the Refinery, a reasonable worst-case scenario assumed that these items are removed from the area. Five trucks are assumed on a daily basis and when 2-way trips and passenger car equivalents are calculated, this Shell Terminal demolition could add as many as 70 ADT. Using Escobar Street eastbound as the worst case for the additional traffic volumes (as it has the least daily traffic volume), the addition of 70 ADT would bring the volume up to 1,966 ADT on Escobar Street. The V/C ratio would remain at 0.16 with the additional traffic and the road would continue to operate at LOS A. Therefore, Shell Terminal demolition would result in an adverse, but less than significant impact (Class III).

Because the Shell Terminal would no longer be operational only the few daily internal vehicular supply trips and employee trips associated with the Shell Terminal would cease. There would be little to no differential on surface street traffic with elimination of the Shell Terminal.

TR-1: No mitigation is required.

Impact TR-2: Full Throughput Alternative

To operate at its current capacity, pipeline delivery, potentially from both the Central Valley and Alaska, would be augmented with foreign crude piped over from other Bay Area marine oil terminals. So that Shell could continue operations uninterrupted, pipeline and booster pump construction would occur prior to Shell Terminal abandonment. Construction would result in potentially significant (Class II) impacts along local roadways where pipeline installation would occur.

To operate at its current capacity, the Shell Refinery would need to arrange for crude/product delivery through pipeline transfers from other terminals to the Shell Refinery. It is assumed that other area terminals would either be able to operate with either no modifications or with minor modifications for increased capacity and pipeline connections to the Shell Refinery. Short-term traffic impacts during construction would be associated with each terminal. For operations, a minimal number of workers would be present for terminal operations, and impacts would be less than significant (Class III). These activities would be separate actions from the Shell Refinery connection via pipeline to these terminals. The impacts associated with the pipeline construction and operation is addressed below.

Short-Term Impacts

Pipeline construction would require both materials deliveries and construction workers, thereby creating a small increase in localized traffic. Pipeline construction may require 25 workers daily, and up to 10 trucks to bring construction supplies and remove any cut material and debris, as necessary. Assuming that each haul truck is equivalent to 2 passenger cars and that each vehicle makes 2 trips (coming and going), the construction ADT volume is 90. Depending on the chosen route and the LOS on

access roads, this temporary additional volume could result in significant, adverse (Class II) impacts if these vehicles are forced onto roads operating at unacceptable levels (i.e., LOS E or F).

A second potential area of temporary, significant, adverse (Class II) impacts is where the pipeline comes into proximity with any roads. Pipeline crossings may necessitate the closure of half or of all the road lanes during construction. Similarly, if the line parallels or is constructed within the confines of any roads, one or more lanes may be closed. Lane closures have a significant impact because the ensuing congestion extends back to the previous intersection and reduces the traffic-carrying capacity of that intersection. Closing one lane of a two-lane road causes a reduction of more than 50 percent because not only the number of lanes is reduced by half, but the speed in the vicinity of the closure is also reduced because of (possibly) narrowed lanes, traffic control mechanisms (cones, flagmen, etc.), and the “rubbernecking” phenomenon (i.e., the tendency of motorists to want to see what is causing the impairment, thus compounding the problem).

Alternative routing of traffic during construction along a roadway segment may slightly mitigate congestion. However, the increase in traffic on nearby adjacent roadways typically causes traffic slowing and backups on those roadways and will only slightly mitigate the problems associated with roadway construction.

Long-Term Impacts

With the abandonment of the Shell Terminal, traffic along Marina Vista Rd. would be the same as baseline conditions. Therefore, no impacts from this alternative would occur. Except for occasional trips associated with its inspection, no trips are associated with pipeline operations. Furthermore, because the booster stations would in all probability be fully automated, only occasional inspection would be required and any traffic associated with this alternative would be minimal and no impacts are projected.

Mitigation Measures for TR-2:

- TR-2.** The following measures shall be implemented during construction:
- Schedule haul trips to avoid peak-hour traffic;
 - Where possible, stockpile the debris for subsequent removal by rail or barge;
 - Stagger the construction work schedule so that peak-hour traffic can be avoided; and,
 - Develop a trip reduction plan or provide incentives to achieve 1.5 persons per vehicle for worker trips.

Rationale for Mitigation: These measures are standard practice in construction projects and are provided to minimize, to the extent feasible, the temporary effects of congestion caused by the addition of construction-related traffic onto the roadway system. These measures would reduce any construction impacts to less than significant.

4.8.6 Cumulative Projects Impacts Analysis

Impact CUM-TR-1: Local and Regional Vehicular Traffic

Cumulative traffic in the Bay area would be expected to increase significantly over the long term. The Shell Terminal's contribution to local and regional vehicular traffic would be adverse, but less than significant (Class III).

Over the 30-year lease period, an increase in traffic along Marina Vista can be expected, however, unless land uses change from the industrial or intensify, a substantial increase on this roadway segment is not foreseen. Any increase in vehicular activity would be associated with the Refinery and not the Shell Terminal. Shell's Terminal would not contribute to cumulative vehicular impacts since there would be no increase in traffic from Shell Terminal operations, and is thus an adverse, but less than significant impact (Class III). Rail is not foreseen as a use by Shell during the lease period.

CUM-TR-1: No mitigation is required.

Table 4.8-6 presents a summary of the impacts and mitigation measures for this section.

**Table 4.8-6
Summary of Vehicular and Rail Transportation
Impact and Mitigation Measures**

Impacts	Mitigation Measures
TR-1: No Project Alternative	TR-1: No mitigation required.
TR-2: Full Throughput Alternative	TR-2: Measures reduce traffic congestion during pipeline construction.
CUM-TR-1: Local and Regional Vehicular Traffic	CUM-TR-1: No mitigation required.